UAMPS
Utah Associated Municipal Power Systems
SMARTENERGY

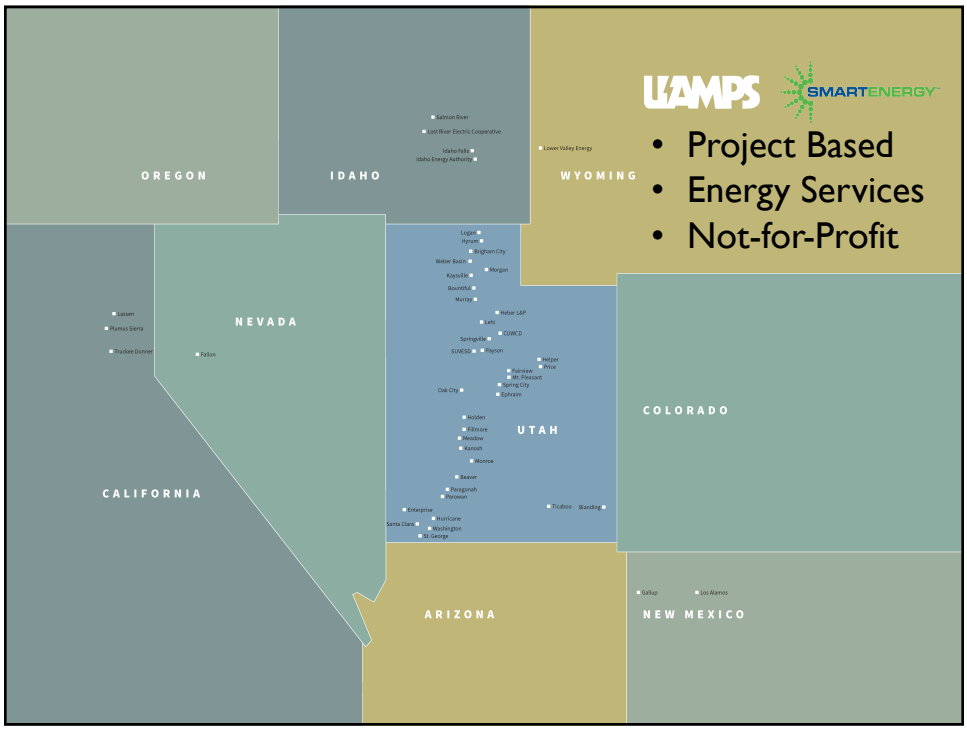
UTAH LEGISLATIVE VISIT
UAMPS NEBO PLANT

JULY 31, 2019

WHAT IS PUBLIC POWER?

- **Community powered**
  - Accountable to your constituents and local leaders
- **Affordable**
  - The rates for the utilities are on average cheaper
- **Reliable**
  - Public power loses power less often
- **Diverse resources**
  - All of the above approach
- **Giving back**
  - Community are shareholders and benefit

WHAT IS UAMPS?



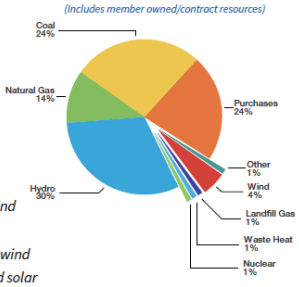
Generation Projects

Hunter Project – *coal-fired*
San Juan Project – *coal-fired*
IPP Project – *coal-fired*
Payson Project – *natural gas*
Natural Gas Project
CRSP Project – *hydro*
- **Provo River** - *hydro*
- **Olmsted** - *hydro*

Horse Butte Wind Project – *wind*
Firm Power Supply Project
- **Pleasant Valley Wind** – *wind*
- **Putua** – *geothermal and solar*

Veyo Heat Recovery Project – *waste heat*
Carbon Free Power Project – *small modular nuclear reactors*

UAMPS Resources by Types: 2018
(Includes member owned/contract resources)



Transmission Projects

Central-St. George Project
Craig-Mona Transmission Project

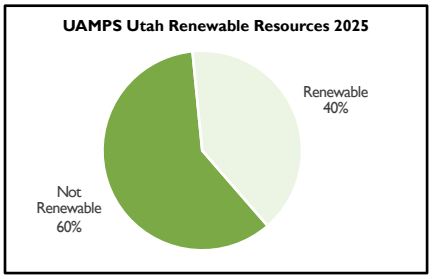
Service Projects

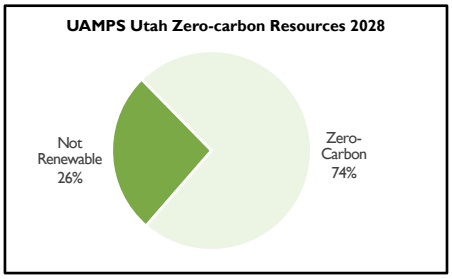
Pool Project – *dispatch and scheduling services*
Resource Project
- **NTUA Solar Study Project** - *solar*
- **Muddy Creek Waste Heat Study Project** – *waste heat*

UAMPS PROJECTS

UAMPS FUTURE RESOURCE MIX

The UAMPS Carbon Free Power Project is a realistic way UAMPS is adopting cleaner sources of energy





A QUICK WORD ON UAMPS' CARBON FREE POWER PROJECT (CFPP)

- Started in 2015
- Decarbonized portfolio will be economically advantageous for its members
- UAMPS platform provides member autonomy to select electric resource mix
- Flexible resource (Nebo Plant) is not carbon free
- Project moving forward on schedule
- Nearly 80% of the cities that you represent are subscribed
- 2019 UAMPS meets subscription goal

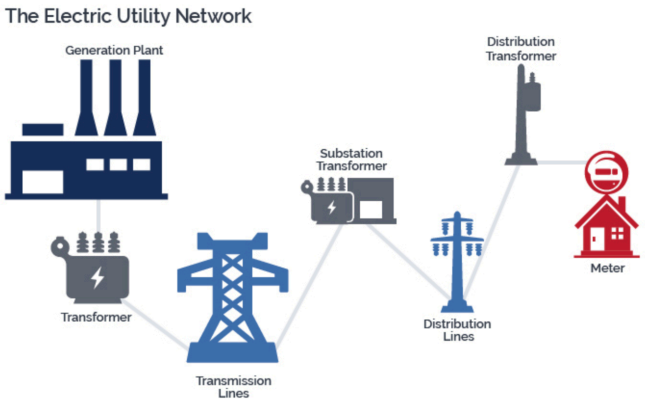
CFPP Subscribed
Blanding
Brigham City
Enterprise
Ephraim
Fairview
Fillmore
Heber L&P
Holden
Kanosh
Lehi
Monroe
Mt. Pleasant
Murray
Oak City
Spring City

RED MESA TAPAHA SOLAR

- Power Purchase Agreement with the Navajo Utility Authority (NTUA)
- 66 MW Solar Photovoltaic facility
- Located on the Navajo Nation in San Juan County, Utah
- Commercial Operation Date in June 2022
- NTUA will use proceeds to support electrification on the Navajo Nation

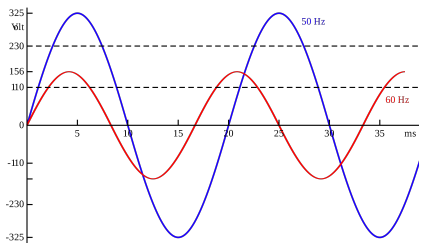
WHERE DOES ENERGY COME FROM AND WHERE DOES IT GO?

WHERE DOES IT GO (HOW IS IT TRANSPORTED)

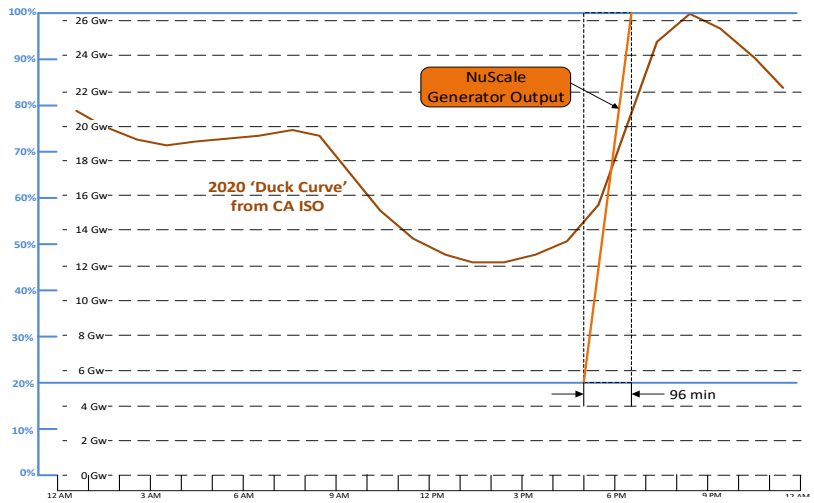


FREQUENCY AND WHY IT MATTERS – IT'S PHYSICS

- The electric grid must always be balanced – load must balance
- Balance or grid stability is measured by an equilibrium point, a frequency of 50 Hertz
- A slight imbalance can lead to blackouts
- Balance is maintained by grid operators and baseload
- Renewables intermittency if not planned can risk imbalance
- Intermittency can cause damage on transmission lines

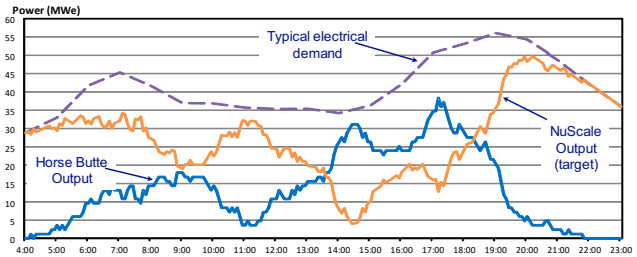


NUSCALE AND THE 2020 CALIFORNIA "DUCK CURVE"

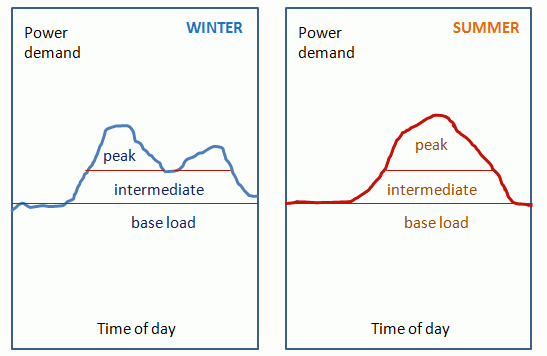


HORSE BUTTE WIND FARM

- Commissioned in 2012
- 32 Vestas V100 turbines
- 1.8 MWe capacity per turbine
- 57.6 MWe total capacity
- 17,600 acres



- Study used Typical Electrical Demand based on 24 hour output (Nov. 11, 2014)
- NuScale design meets or exceeds EPRI Utility Requirements Document (URD), Rev. 13, load following and other ancillary service requirements.



BASELOAD

UAMPS NEBO PLANT

- General Electric Frame 7EA Gas turbine (combined cycle natural gas)
- Year built: June 2004
- Generating capacity: 140 MW
- Employees: 13 employees

QUESTIONS